TO2T60 92296860

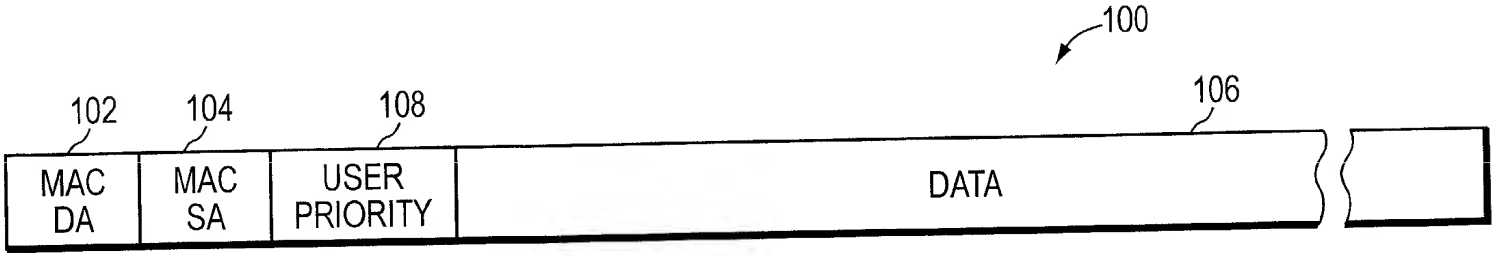

FIG. 1A (PRIOR ART)

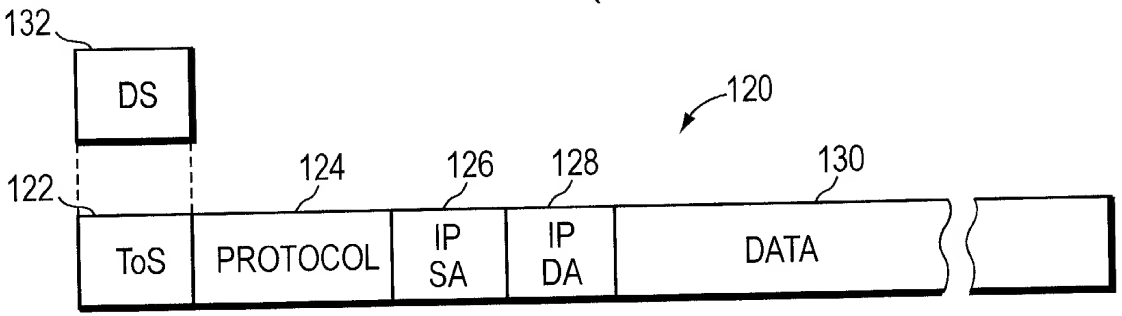

FIG. 1B (PRIOR ART)

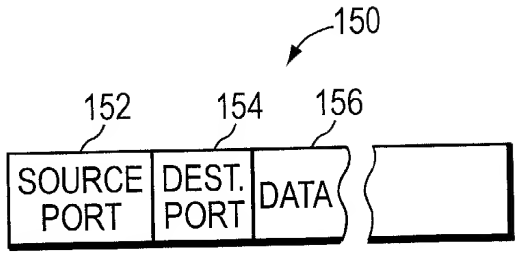

FIG. 1C (PRIOR ART)

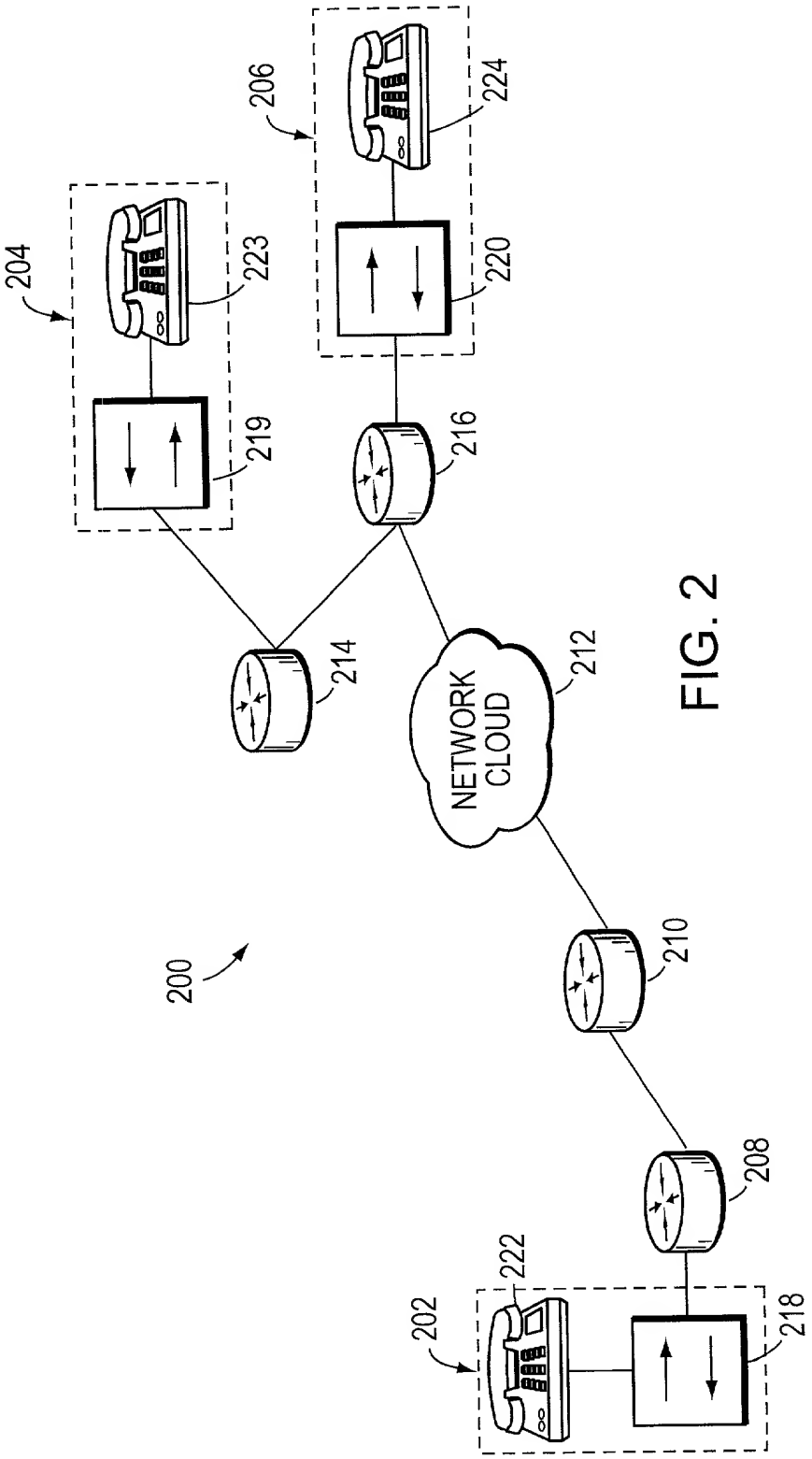
200
202
204
206
208
210
212
214
216
218
219
220
222
223
224
NETWORK CLOUD

FIG. 2

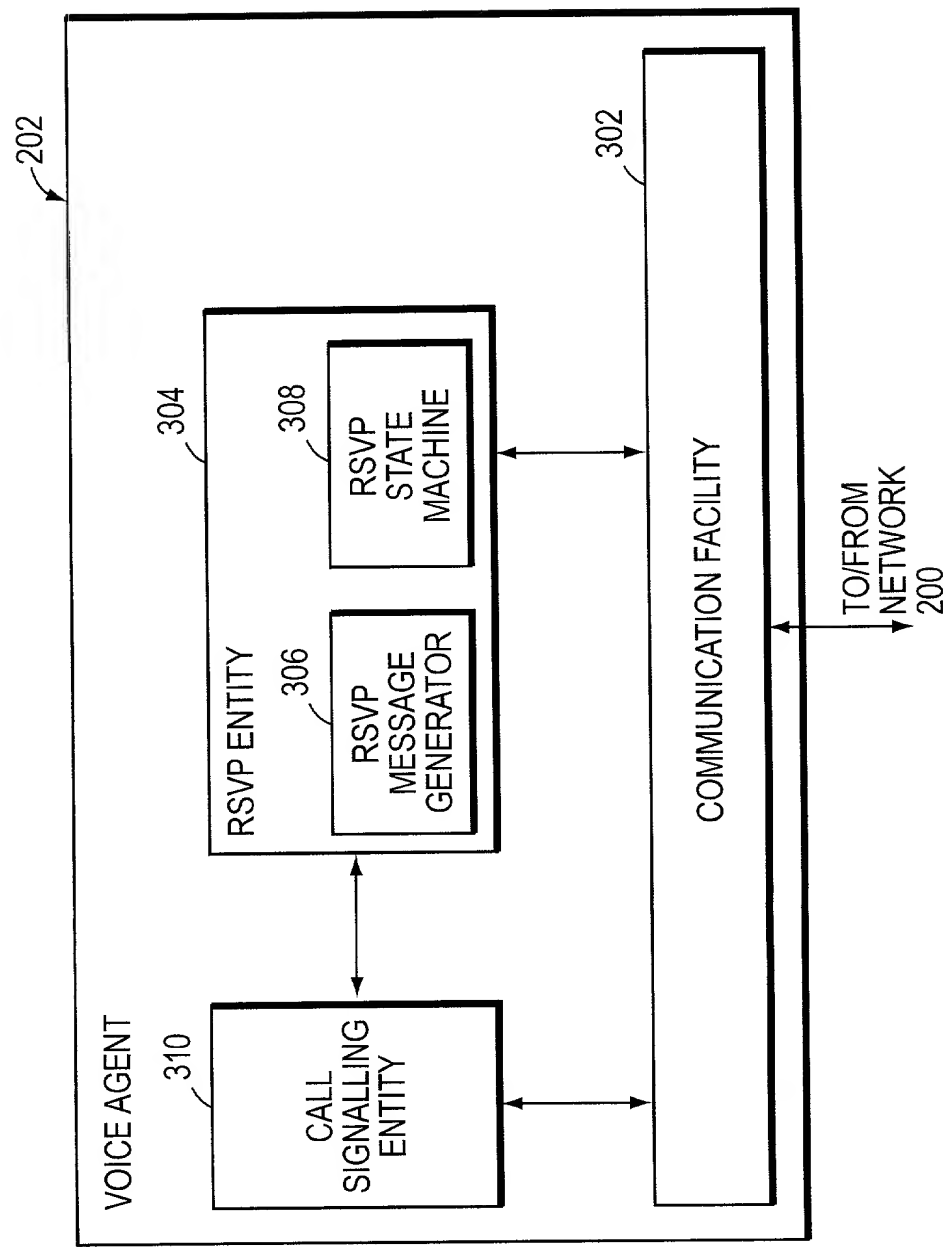
202
VOICE AGENT
310
CALL SIGNALLING ENTITY
RSVP ENTITY
304
306
RSVP MESSAGE GENERATOR
308
RSVP STATE MACHINE
302
COMMUNICATION FACILITY
TO/FROM NETWORK 200

FIG. 3

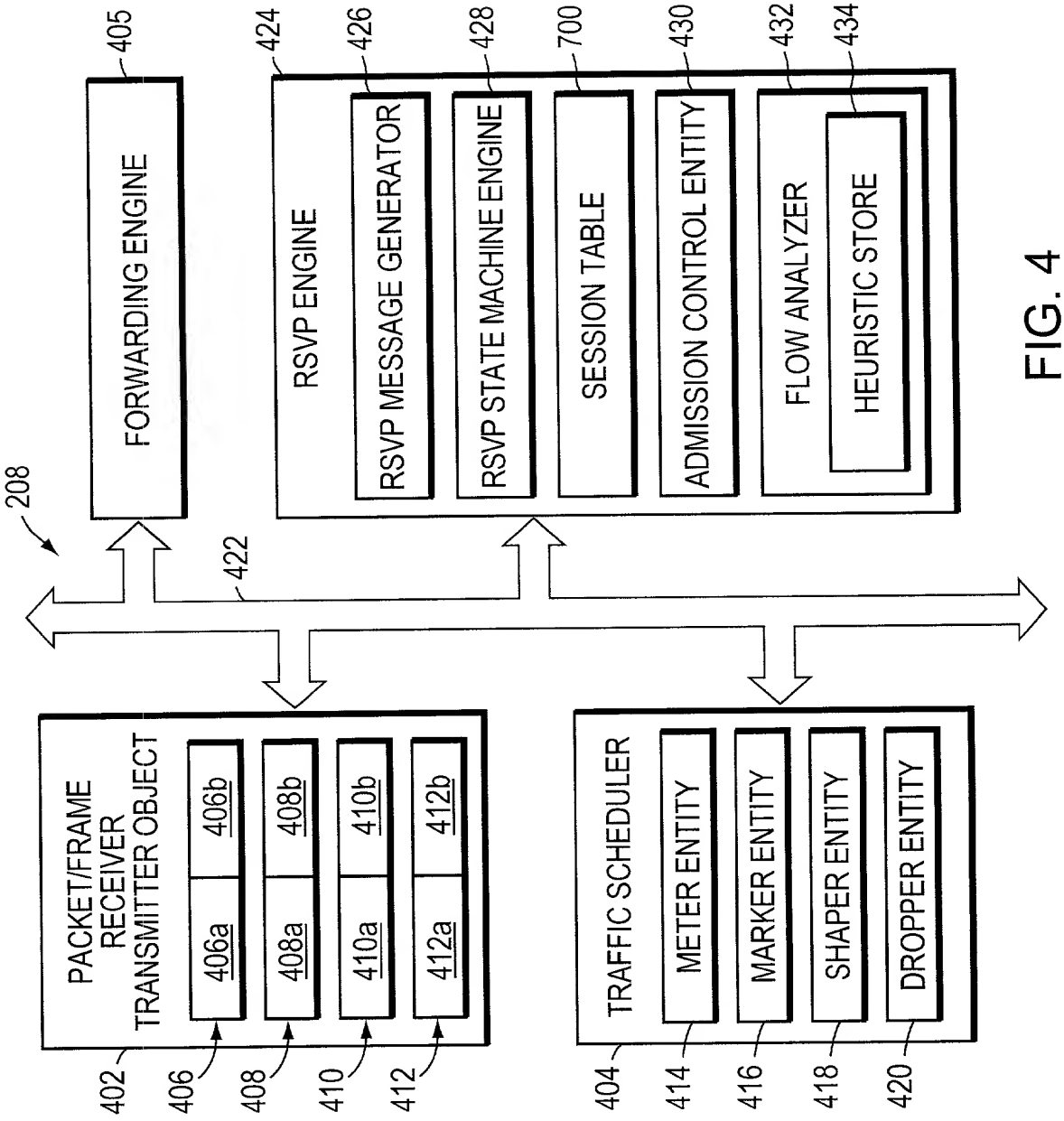
208
405
FORWARDING ENGINE
424
RSVP ENGINE
426
RSVP MESSAGE GENERATOR
428
RSVP STATE MACHINE ENGINE
700
SESSION TABLE
430
ADMISSION CONTROL ENTITY
432
FLOW ANALYZER
434
HEURISTIC STORE
422
PACKET/FRAME RECEIVER TRANSMITTER OBJECT
406a
406b
408a
408b
410a
410b
412a
412b
402
406
408
410
412
TRAFFIC SCHEDULER
METER ENTITY
MARKER ENTITY
SHAPER ENTITY
DROPPER ENTITY
404
414
416
418
420

FIG. 4

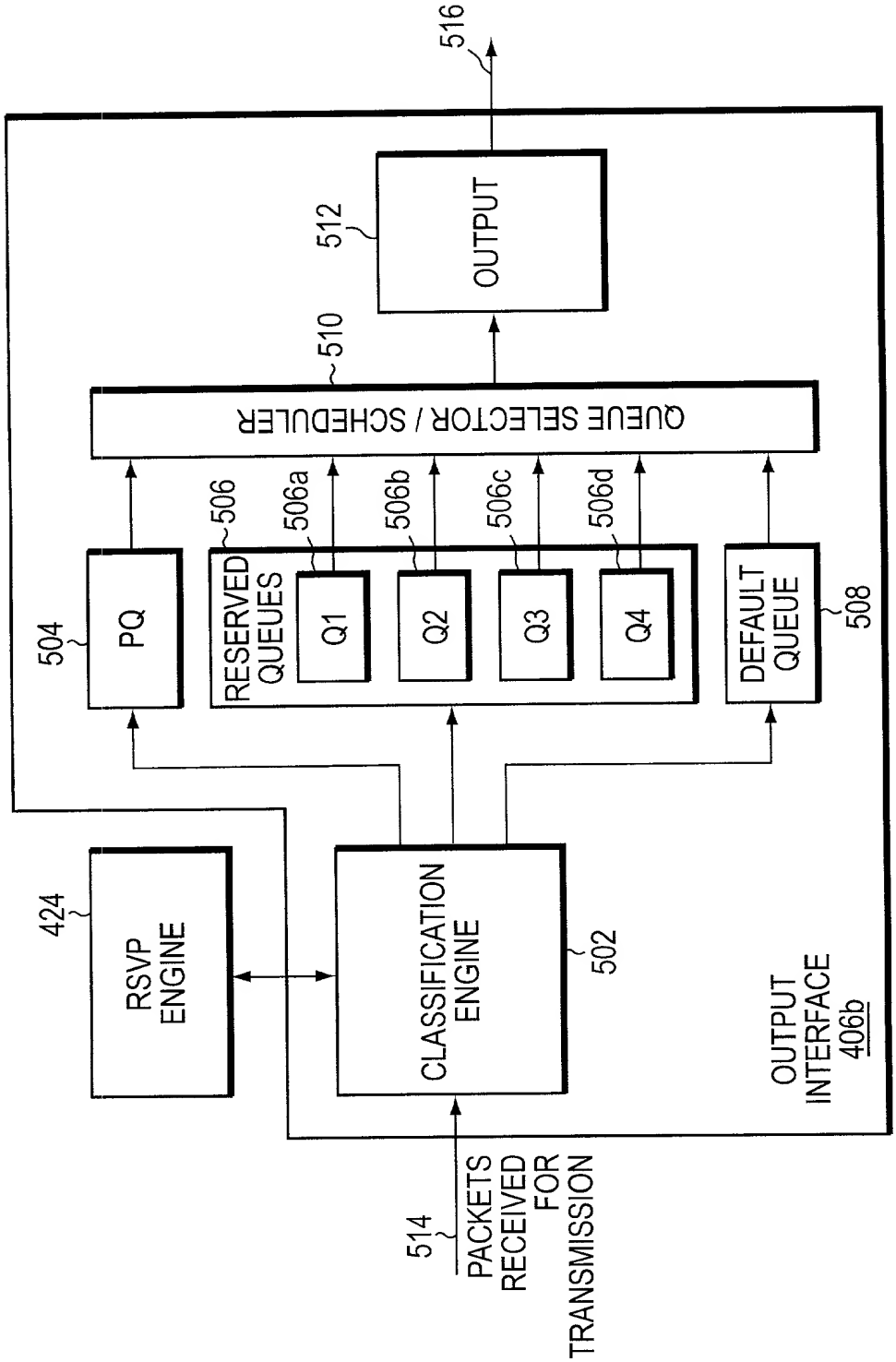
516
512
OUTPUT
510
QUEUE SELECTOR / SCHEDULER
506
506a
506b
506c
506d
504
PQ
RESERVED QUEUES
Q1
Q2
Q3
Q4
DEFAULT QUEUE
508
424
RSVP ENGINE
CLASSIFICATION ENGINE
502
OUTPUT INTERFACE 406b
514
PACKETS RECEIVED FOR TRANSMISSION

FIG. 5

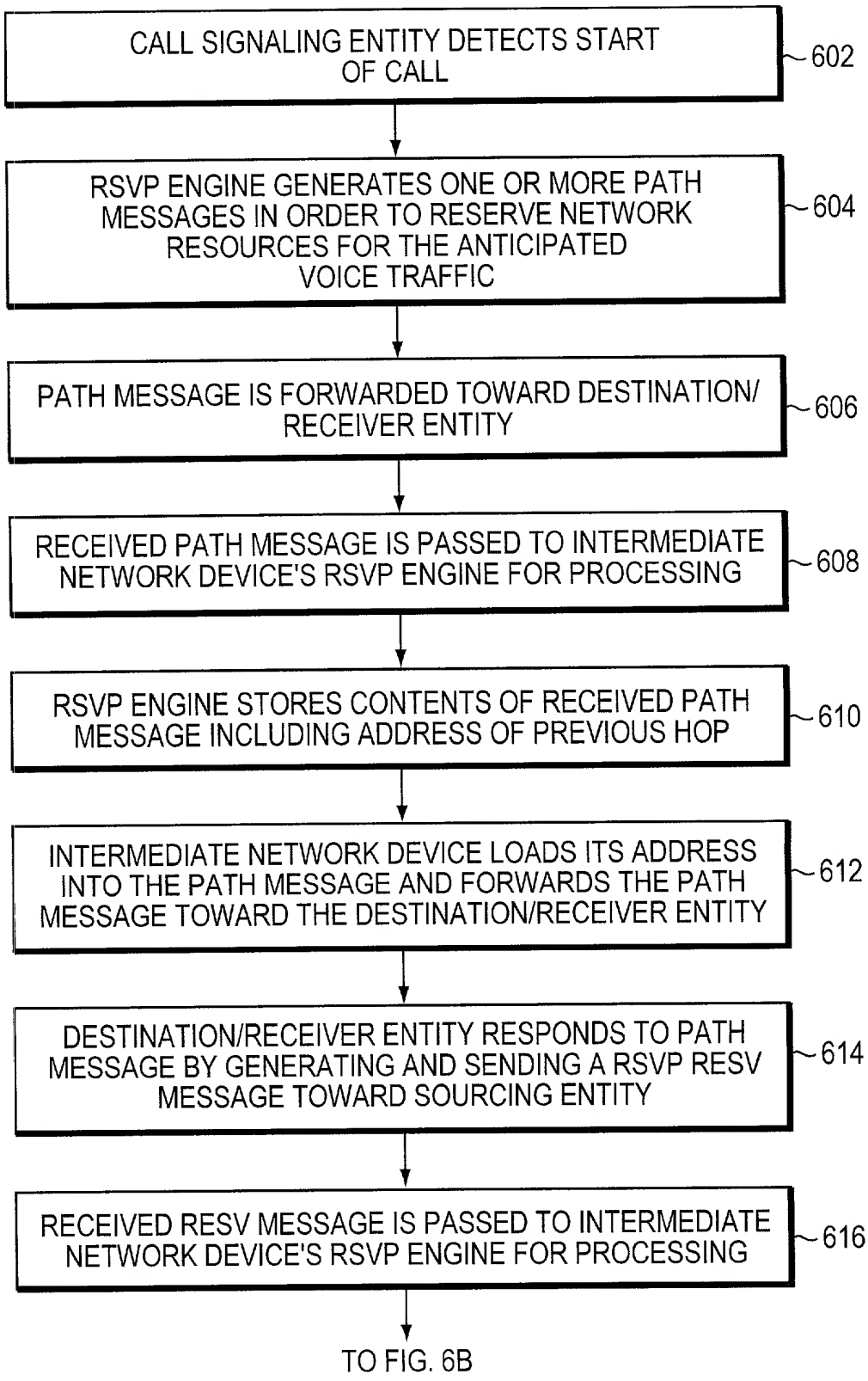
CALL SIGNALING ENTITY DETECTS START OF CALL
602
RSVP ENGINE GENERATES ONE OR MORE PATH MESSAGES IN ORDER TO RESERVE NETWORK RESOURCES FOR THE ANTICIPATED VOICE TRAFFIC
604
PATH MESSAGE IS FORWARDED TOWARD DESTINATION/ RECEIVER ENTITY
606
RECEIVED PATH MESSAGE IS PASSED TO INTERMEDIATE NETWORK DEVICE'S RSVP ENGINE FOR PROCESSING
608
RSVP ENGINE STORES CONTENTS OF RECEIVED PATH MESSAGE INCLUDING ADDRESS OF PREVIOUS HOP
610
INTERMEDIATE NETWORK DEVICE LOADS ITS ADDRESS INTO THE PATH MESSAGE AND FORWARDS THE PATH MESSAGE TOWARD THE DESTINATION/RECEIVER ENTITY
612
DESTINATION/RECEIVER ENTITY RESPONDS TO PATH MESSAGE BY GENERATING AND SENDING A RSVP RESV MESSAGE TOWARD SOURCING ENTITY
614
RECEIVED RESV MESSAGE IS PASSED TO INTERMEDIATE NETWORK DEVICE'S RSVP ENGINE FOR PROCESSING
616
TO FIG. 6B

FIG. 6A

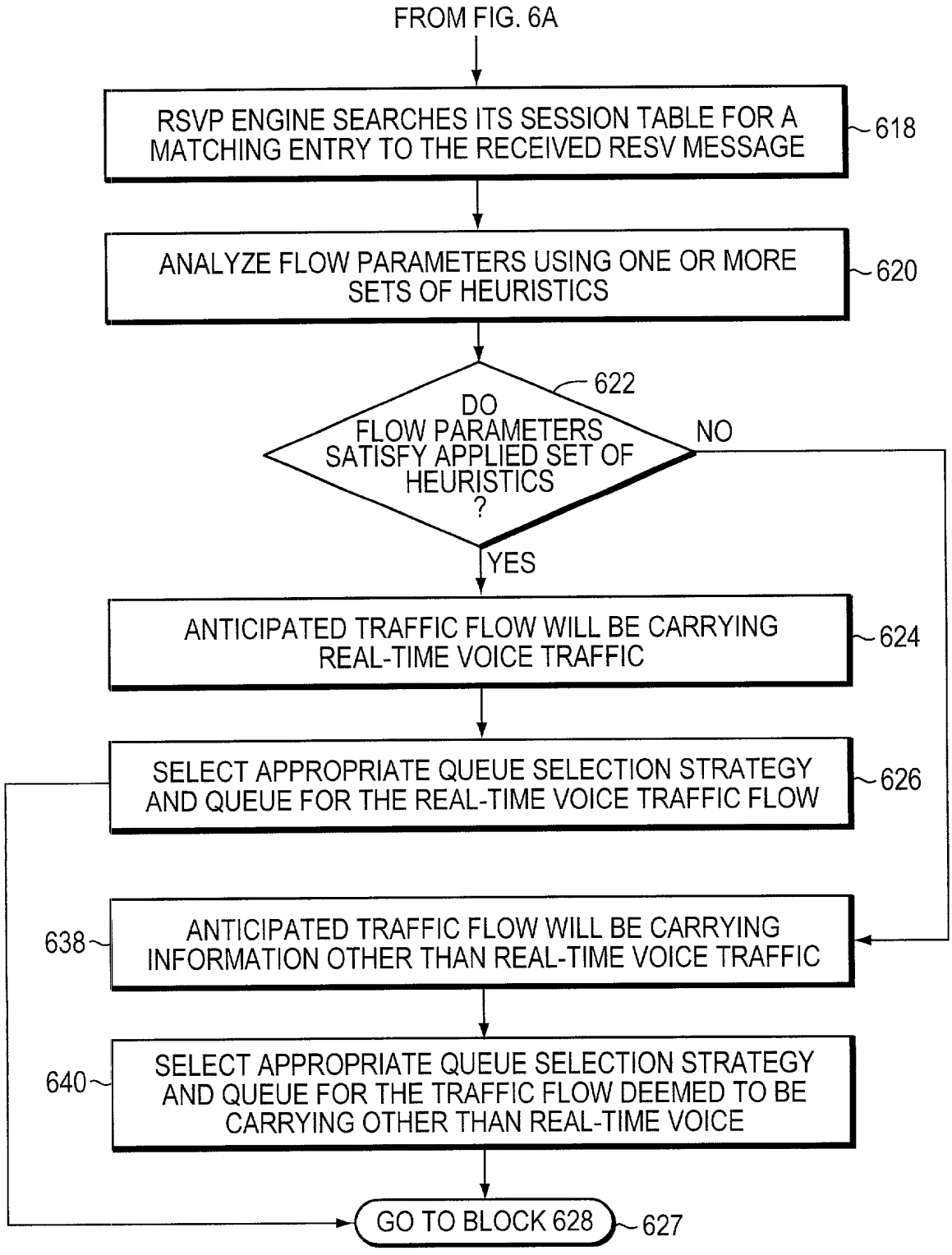
FROM FIG. 6A
RSVP ENGINE SEARCHES ITS SESSION TABLE FOR A MATCHING ENTRY TO THE RECEIVED RESV MESSAGE
618
ANALYZE FLOW PARAMETERS USING ONE OR MORE SETS OF HEURISTICS
620
622
DO FLOW PARAMETERS SATISFY APPLIED SET OF HEURISTICS ?
NO
YES
ANTICIPATED TRAFFIC FLOW WILL BE CARRYING REAL-TIME VOICE TRAFFIC
624
SELECT APPROPRIATE QUEUE SELECTION STRATEGY AND QUEUE FOR THE REAL-TIME VOICE TRAFFIC FLOW
626
638
ANTICIPATED TRAFFIC FLOW WILL BE CARRYING INFORMATION OTHER THAN REAL-TIME VOICE TRAFFIC
640
SELECT APPROPRIATE QUEUE SELECTION STRATEGY AND QUEUE FOR THE TRAFFIC FLOW DEEMED TO BE CARRYING OTHER THAN REAL-TIME VOICE
GO TO BLOCK 628
627

FIG. 6B

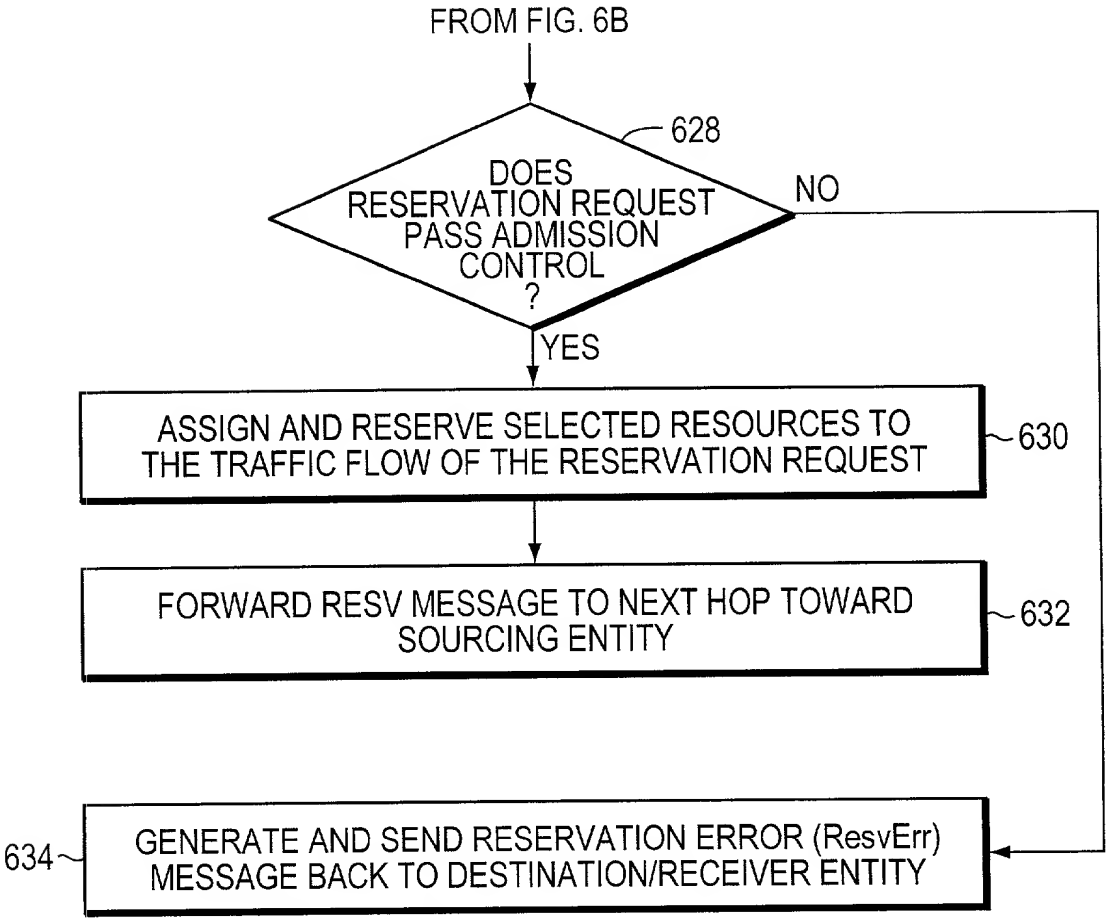
FROM FIG. 6B
628
DOES RESERVATION REQUEST PASS ADMISSION CONTROL ?
NO
YES
ASSIGN AND RESERVE SELECTED RESOURCES TO THE TRAFFIC FLOW OF THE RESERVATION REQUEST
630
FORWARD RESV MESSAGE TO NEXT HOP TOWARD SOURCING ENTITY
632
634
GENERATE AND SEND RESERVATION ERROR (ResvErr) MESSAGE BACK TO DESTINATION/RECEIVER ENTITY

FIG. 6C

RSVP SESSION TABLE

	702 SOURCE ADDRESS	704 SOURCE PORT	706 DESTINATION ADDRESS	708 DESTINATION PORT	710 PROTOCOL	712 PREVIOUS HOP ADDRESS	713 QUEUE SELECTION STRATEGY/ QUEUE	714 SELECTED PHB
716a	123.100.106.148	555	111.222.104.205	1061	TCP	123.115.119.102	PQ	EF
716b	155.136.114.101	718	222.123.154.158	1032	TCP	154.122.166.177	WFQ/Q2	
716c	165.225.147.174	951	156.189.208.205	1030	TCP	222.211.155.156	WFQ/Q3	AF
716d	203.238.237.106	114	248.226.143.218	1028	UDP	123.118.150.160	PQ	
716e	123.100.106.148	555	111.132.141.168	1061	UDP	123.116.118.012	WFQ/DQ	

FIG. 7

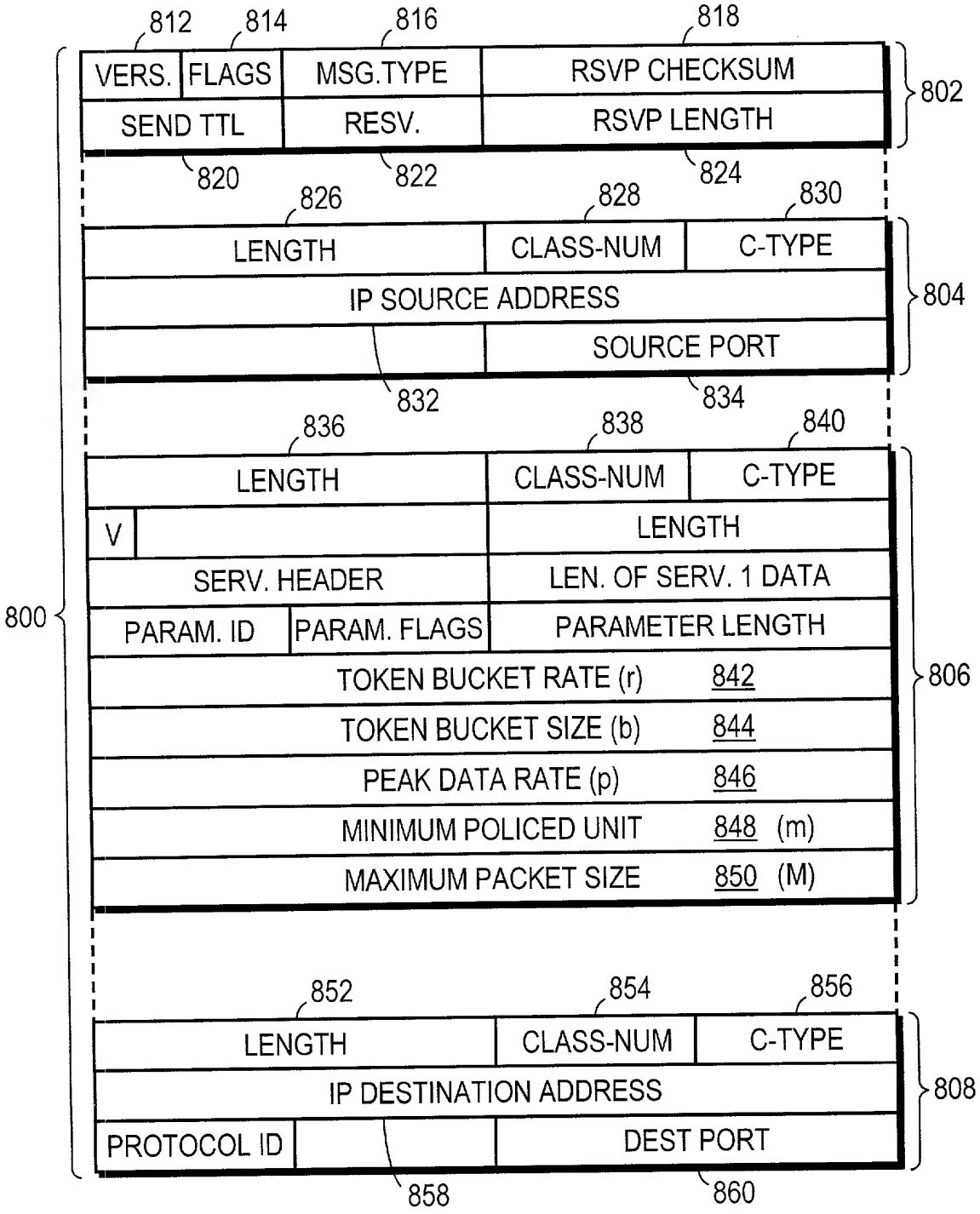
812
814
816
818
VERS.
FLAGS
MSG.TYPE
RSVP CHECKSUM
802
SEND TTL
RESV.
RSVP LENGTH
820
822
824
826
828
830
LENGTH
CLASS-NUM
C-TYPE
IP SOURCE ADDRESS
804
SOURCE PORT
832
834
836
838
840
LENGTH
CLASS-NUM
C-TYPE
V
LENGTH
SERV. HEADER
LEN. OF SERV. 1 DATA
800
PARAM. ID
PARAM. FLAGS
PARAMETER LENGTH
TOKEN BUCKET RATE (r) 842
TOKEN BUCKET SIZE (b) 844
PEAK DATA RATE (p) 846
MINIMUM POLICED UNIT 848 (m)
MAXIMUM PACKET SIZE 850 (M)
806
852
854
856
LENGTH
CLASS-NUM
C-TYPE
IP DESTINATION ADDRESS
808
PROTOCOL ID
DEST PORT
858
860

FIG. 8